PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Artcle 36 and Rule 70)

Applicant's or agent's file reference PCA20743/SCP	**FOR FURTHER ACTION**	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. **PCT/KR2003/000550**	International filing date *(day/month/year)* **21 MARCH 2003 (21.03.2003)**	Priority date *(day/month/year)* 31 MAY 2002 (31.05.2002)

International Patent Classification (IPC) or national classification and IPC

IPC7 C08F 2/48

Applicant

LUVANTIX CO., LTD. et al

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 4 sheets, including this cover sheet.

   [X] This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of 22 sheets.

3. This report contains indications relating to the following items:

   - I [X] Basis of the report
   - II [ ] Priority
   - III [ ] Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - IV [ ] Lack of unity of invention
   - V [X] Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - VI [ ] Certain documents cited
   - VII [ ] Certain defects in the international application
   - VIII [ ] Certain observations on the international application

Date of submission of the demamd	Date of completion of this report
09 DECEMBER 2003 (09.12.2003)	20 SEPTEMBER 2004 (20.09.2004)

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

ernational aplication No.
PCT/KR2003/000550

I. Basis of the report

1. With regard to the elements of the international application:*

☐ the international application as originally filed

☒ the description:
pages _____ , as originally filed
pages _____ , filed with the demand
pages 1 - 20 , filed with the letter of 29.07.2004

☒ the claims:
pages _____ , as originally filed
pages _____ , as amended (together with any statment) under Article 19
pages _____ , filed with the demand
pages 21 - 22 , filed with the letter of 29.07.2004

☐ the drawings:
pages _____ , as originally filed
pages _____ , filed with the demand
pages _____ , filed with the letter of _____

☐ the sequence listing part of the description:
pages _____ , as originally filed
pages _____ , filed with the demand
pages _____ , filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
These elements were available or furnished to this Authority in the following language _____ which is

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).

☐ the language of publication of the international application(under Rule 48.3(b)).

☐ the language of the translation furnished for the purposes of international preliminary examination(under Rules 55.2 and/ or 55.3).

3. With regard to any **nucleotide** and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☐ contained inthe international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form

☐ The statement that the subsequently furnished written sequence listing does not go beyond the disc losure in the international applicationas as filed has been furinshed.

☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages _____

☐ the claims, Nos. _____

☐ the drawings, sheet _____

5.

☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box(Rule 70.2(c)).**

* *Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed." and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).*

** *Any replacement sheet containing such amendments must be referred to under item I and annexed to this report.*

INTERNATIONAL PRELIMINARY EXAMINATION

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V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-7	YES
	Claims	None	NO
Inventive step (IS)	Claims	1-7	YES
	Claims	None	NO
Industrial applicability (IA)	Claims	1-7	YES
	Claims	None	NO

2. Citations and explanations (Rule 70.7)

Reference is made to the following documents from the International Search Report(ISR):

D1: WO-A-97/46495 (11 December 1997)
D2: US-A-5182786 (26 January 1993)

(1) Novelty

Claims 1~5 relate to a process for preparing UV-cured foam by irradiating UV light to a composition comprising: (A) a photolytic foaming agent selected from an azo compound, a combination of a sulfonium salt and an inorganic carbonate, and a mixture thereof, (B) a photopolymerizable urethane acrylate oligomer, (C) a photopolymerizable monomer, (D) a photopolymerization initiator, and (E) a photolysis catalyst.
Claims 6, 7 relate to the use of composition which is coated on an optical article(an air blown fiber system).

D1 is considered to represent the most relevant state of the art for the subject matter of present claims 1~7. It relates to a liquid curable resin composition for coating optical fibers comprising (a) an urethane (meth)acrylate, (b) a polymerization initiator, and (c) polymer particles.

D2 discloses an active energy beam-curable composition for coating the surface of optical fibers therewith, comprising an active energy beam-curable substance, particulate substance and a photopolymerization initiator.

However, none of D1 and D2 discloses the preparation of a UV-cured foam by irradiating UV light to a composition comprising a photolytic foaming agent selected from an azo compound, a combination of a sulfonium salt and an inorganic carbonate, and a mixture thereof; and a photolysis catalyst.

Therefore, the subject matter of the present claims 1~7 is considered to be novel fulfilling the criteria set forth in Article 33(2) PCT.
(Continued on Supplemental Sheet.)

Supplemental Box
(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of:

Box V.

(2) Inventive step

The subject matter of the present claims 1～7 differs from the teaching of D1 and D2 in that the technical problem to be solved is to prepare a UV-curable resin composition which can be used for forming a light-weight, homogeneously foamed secured layer; and in the technical feature characterized with a photolytic foaming agent(an azo compound, a combination of a sulfonium salt and an inorganic carbonate, and a mixture thereof) and a photolysis catalyst.

In regard to the technical composition characterized with a photolytic foaming agent and a photolysis catalyst and its effect in the present invention, the skilled person having knowledge of the teaching of D1 and D2 would have been unable to predict the preparation of a UV-curable resin composition which can be used for forming a light-weight, homogeneously foamed secured layer.

Accordingly, the subject matter of claims 1～7 seems to involve an inventive step fulfilling the criteria set forth in Article 33(3) PCT.

(3) Industrial applicability

It is an objective of the present invention to prepare a UV-curable resin composition which can be used for forming a light-weight, homogeneously foamed secured layer. There is no reason to negate the industrial applicability of this invention. Consequently, claims 1～7 appear to meet the requirements of Article 33(4) PCT.